

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 07 February 2001 (07.02.01)	
International application No. PCT/IL00/00319	Applicant's or agent's file reference 015/01117
International filing date (day/month/year) 04 June 2000 (04.06.00)	Priority date (day/month/year) 04 June 1999 (04.06.99)
Applicant DARVISH, Nissim et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

04 January 2001 (04.01.01)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer R. E. Stoffel Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

To:

FENSTER & COMPANY PATENT
ATTORNEYS, LTD
Attn. FENSTER, Paul
P.O.Box 10256
Petach Tikva 49002
ISRAEL

Date of mailing
(day/month/year)

22/09/2000

Applicant's or agent's file reference

015/01117

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/IL 00/00319

International filing date
(day/month/year)

04/06/2000

Applicant

IMPULSE DYNAMICS N.V. et al.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the International application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Luis-Miguel Paredes Sanchez

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 015/01117	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/IL 00/ 00319	International filing date (day/month/year) 04/06/2000	(Earliest) Priority Date (day/month/year) 04/06/1999
Applicant IMPULSE DYNAMICS N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☐ the text is approved as submitted by the applicant.
- ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- ☐ as suggested by the applicant.
- ☐ because the applicant failed to suggest a figure.
- ☒ because this figure better characterizes the invention.
- 1 ☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 00/ 00319

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The abstract is changed as follows:

Line 1: after "apparatus" insert "(100)";
line 2+5: after "electrode" insert "(106)";
line 3+4: after "power source" insert "(120)".

PCT/IL 00/00319

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 00/00319

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 15317 A (SULZER INTERMEDICS INC) 16 April 1998 (1998-04-16) cited in the application page 4, line 16 -page 10, line 34 page 12, line 25 -page 14, line 10; figures	1,3-7, 12-17, 20,33, 35,40, 51,62, 65,68
A	US 5 634 899 A (SHAPLAND JAMES E ET AL) 3 June 1997 (1997-06-03) cited in the application column 2, line 49 -column 3, line 44; figures	1,12-17, 22-24, 62,63, 65,66,68

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 00/00319

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5087243	A	11-02-1992	AT 127028 T	15-09-1995
			CA 2044791 A,C	19-12-1991
			DE 69112533 D	05-10-1995
			DE 69112533 T	08-02-1996
			EP 0468636 A	29-01-1992
			JP 2686383 B	08-12-1997
			JP 5115562 A	14-05-1993
WO 9815317	A	16-04-1998	NONE	
US 5634899	A	03-06-1997	AU 1559595 A	01-08-1995
			WO 9518649 A	13-07-1995
			US 5865787 A	02-02-1999

PATENT COOPERATION TREATY

RECEIVED

20-09-2001

FENSTER & Co.

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

FENSTER, Paul
FENSTER & COMPANY PATENT
ATTORNEYS, LTD
P.O.Box 10256
Petach Tikva 49002
ISRAEL

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing (day/month/year)	10.09.2001
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Applicant's or agent's file reference 015/01117	IMPORTANT NOTIFICATION
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International application No. PCT/IL00/00319	International filing date (day/month/year) 04/06/2000	Priority date (day/month/year) 04/06/1999
-------------------------------------------------	----------------------------------------------------------	----------------------------------------------

Applicant
IMPULSE DYNAMICS N.V. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
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D-80298 Munich
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 015/01117	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL00/00319	International filing date (day/month/year) 04/06/2000	Priority date (day/month/year) 04/06/1999
International Patent Classification (IPC) or national classification and IPC A61N1/32		
Applicant IMPULSE DYNAMICS N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
 - ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the report
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☒ Certain defects in the international application
 - VIII ☒ Certain observations on the international application

Date of submission of the demand 04/01/2001	Date of completion of this report 10.09.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Krahbichler, E Telephone No. +49 89 2399 7365 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/00319

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-34 as originally filed

Claims, No.:

1-69 as originally filed

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/0031:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	8, 10-15, 19-21, 30-32, 34, 36-39, 43, 44-50, 52, 58-59, 61, 63, 64, 66, 67, 69
	No:	Claims	1-7, 9, 16-18, 22-29, 33, 35, 40-42, 51, 53-57, 60, 62, 65, 68
Inventive step (IS)	Yes:	Claims	8, 10-15, 30-32, 34, 36-39, 44-50, 52, 58-59, 61, 64, 67
	No:	Claims	19-21, 38-39, 43, 63, 66, 69
Industrial applicability (IA)	Yes:	Claims	1-69
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL00/00319

Reference is made to the following documents:

D1: US-A-5 087 243 (AVITALL BOAZ) 11 February 1992 (1992-02-11) cited in the application

D2: US-A-5 634 899 (SHAPLAND JAMES E ET AL) 3 June 1997 (1997-06-03) cited in the application

D3: WO 98 15317 A (SULZER INTERMEDICS INC) 16 April 1998 (1998-04-16) cited in the application

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.) Novelty

Document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1, and insofar as this claim can be understood (see Section VIII), this document discloses (the references in parentheses applying to this document): an electrical treatment apparatus (fig.1, col. 3, l.17-19) for use with an associated molecule source ((23); col. 3, l. 65ff.), comprising: at least one electrode((11), (12)); a power source (35) for electrifying said at least one electrode; and a controller (36), which is programmed (col. 4, l. 27 f.) to activate the power source to selectively electrify said at least one electrode (fig. 4) to apply at least one electric field (cathode/anode, fig. 4) including a transport effect for transporting a molecule in a desired manner (col. 4, l. 67 - col. 5, l. 10) and a non-excitatory control effect (col. 5, l. 3-10) for controlling the activity of at least a part of a heart (col. 5, l. 14), said programming selected to achieve a desired provision of said molecule (col. 4, l. 67 - col. 5, l. 7) into at least a portion of a patient's heart or associated vasculature (col. 3, l. 39ff.).

Claim 1 can therefore not be considered as novel (Article 33(2) PCT).

Document D1 inherently implies all the specific features from claims 2-7,9,16-18,22-29,33,35,40-42,51,53-57,60,62,65 and 68, for instance:

- the treatment device from document D1 comprises a microprocessor (D1: col. 27 - 29). It is state of the art that a microprocessor can be either hardware (claim 2) or software (claim 3) programmable,

- for the person skilled in the art it is apparent that the known device from D1 inherently comprises a programming input, even wireless (claim 4), that said programming is adapted for the patient (claim 5), the programming comprises the setting of operational parameters like pulse length and strength (claim 6), and that this programming can be done by choosing from different protocols (claim 7),
- the device of document D1 comprises a synchronisation connection (D1: Fig. 4) to a molecule source (D1: (23)).

Dependent claims 2-7,9,16-18,22-29,33,35,40-42,51,53-57,60,62,65 and 68, can therefore not be regarded as novel according to Article 33(2) PCT in connection with the PCT examination guidelines C-III-4.8 and C-IV-7.6, specifying that non-distinctive characteristics of particular uses (e.g. programmable) should be disregarded when assessing novelty provided that the known device is indeed suitable for these uses, which is the case with D1.

2.) Inventive step

Dependent claims 19-21,38-39,43,63,66 and 69 appear not to satisfy the requirement of Article 33(3)PCT (inventive step) for the following reasoning:

In order to arrive at the features of claims 19, 38, 39, 43, 63, 66 and 69, it would be obvious for the person skilled in the art to combine features known from document D2 with those of document D1, for instance:

- (claim 19): a molecule source comprising a catheter is known from D2 col. 2, l. 50ff.
- (claims 38-39): the use of a pacemaker instead of a defibrillator in an apparatus from D1 is disclosed in D2 col. 2, l. 52f.

In order to arrive at the features of claims 20 and 21 it would be obvious for the person skilled in the art to combine features known from document D3 with those of document D1, because document D3 discloses a controllable drug injection electrode containing multiple drugs (molecules) (claim 20) which can be released independently of each other (claim 21), see D3 page 5, l. 8 - 27.

3.) Further Remarks

It appears that dependent claims (8), (10-15), (30-31),(32), (34,36-37,50,52), (44-49), (58-

59), (61) and (64, 67) comprise features which cannot be found in any of the documents cited in the International Search Report and appear furthermore to provide technical effects. Thus, these claims could be used in any possible future regional phase as the basis for claims which would fulfil the requirements of novelty / inventive step, whereas possible unity problems will have to be considered, if any.

Re Item VII

Certain defects in the international application

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is **not clearly defined**. For instance the statement in claim 1, "electric field including a transport effect for transporting a molecule in a desired manner", does not enable the skilled person to determine which technical features are necessary to perform the stated functions.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 015/01117	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IL00/00319	International filing date (day/month/year) 04/06/2000	Priority date (day/month/year) 04/06/1999
International Patent Classification (IPC) or national classification and IPC A61N1/32		
Applicant IMPULSE DYNAMICS N.V. et al.		

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- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 04/01/2001	Date of completion of this report 10.09.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Krahbichler, E Telephone No. +49 89 2399 7365 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL00/00319

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-34 as originally filed

Claims, No.:

1-69 as originally filed

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/00319

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	8,10-15,19-21,30-32,34,36-39,43,44-50,52,58-59,61,63,64,66,67,69
	No:	Claims	1-7,9,16-18,22-29,33,35,40-42,51,53-57,60,62,65,68
Inventive step (IS)	Yes:	Claims	8,10-15,30-32,34,36-39,44-50,52,58-59,61,64,67
	No:	Claims	19-21,38-39,43,63,66,69
Industrial applicability (IA)	Yes:	Claims	1-69
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL00/00319

Reference is made to the following documents:

- D1: US-A-5 087 243 (AVITALL BOAZ) 11 February 1992 (1992-02-11) cited in the application
D2: US-A-5 634 899 (SHAPLAND JAMES E ET AL) 3 June 1997 (1997-06-03) cited in the application
D3: WO 98 15317 A (SULZER INTERMEDICS INC) 16 April 1998 (1998-04-16) cited in the application

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.) Novelty

Document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1, and insofar as this claim can be understood (see Section VIII), this document discloses (the references in parentheses applying to this document):
an electrical treatment apparatus (fig.1, col. 3, l.17-19) for use with an associated molecule source ((23); col. 3, l. 65ff.), comprising: at least one electrode((11), (12)); a power source (35) for electrifying said at least one electrode; and a controller (36), which is programmed (col. 4, l. 27 f.) to activate the power source to selectively electrify said at least one electrode (fig. 4) to apply at least one electric field (cathode/anode, fig. 4) including a transport effect for transporting a molecule in a desired manner (col. 4, l. 67 - col. 5, l. 10) and a non-excitatory control effect (col. 5, l. 3-10) for controlling the activity of at least a part of a heart (col. 5, l. 14), said programming selected to achieve a desired provision of said molecule (col. 4, l. 67 - col. 5, l. 7) into at least a portion of a patient's heart or associated vasculature (col. 3, l. 39ff.).

Claim 1 can therefore not be considered as novel (Article 33(2) PCT).

Document D1 inherently implies all the specific features from claims 2-7,9,16-18,22-29,33,35,40-42,51,53-57,60,62,65 and 68, for instance:

- the treatment device from document D1 comprises a microprocessor (D1: col. 27 - 29). It is state of the art that a microprocessor can be either hardware (claim 2) or software (claim 3) programmable,

- for the person skilled in the art it is apparent that the known device from D1 inherently comprises a programming input, even wireless (claim 4), that said programming is adapted for the patient (claim 5), the programming comprises the setting of operational parameters like pulse length and strength (claim 6), and that this programming can be done by choosing from different protocols (claim 7),
- the device of document D1 comprises a synchronisation connection (D1: Fig. 4) to a molecule source (D1: (23)).

Dependent claims 2-7,9,16-18,22-29,33,35,40-42,51,53-57,60,62,65 and 68, can therefore not be regarded as novel according to Article 33(2) PCT in connection with the PCT examination guidelines C-III-4.8 and C-IV-7.6, specifying that non-distinctive characteristics of particular uses (e.g. programmable) should be disregarded when assessing novelty provided that the known device is indeed suitable for these uses, which is the case with D1.

2.) Inventive step

Dependent claims 19-21,38-39,43,63,66 and 69 appear not to satisfy the requirement of Article 33(3)PCT (inventive step) for the following reasoning:

In order to arrive at the features of claims 19, 38, 39, 43, 63, 66 and 69, it would be obvious for the person skilled in the art to combine features known from document D2 with those of document D1, for instance:

- (claim 19): a molecule source comprising a catheter is known from D2 col. 2, l. 50ff.
- (claims 38-39): the use of a pacer instead of a defibrillator in an apparatus from D1 is disclosed in D2 col. 2, l. 52f.

In order to arrive at the features of claims 20 and 21 it would be obvious for the person skilled in the art to combine features known from document D3 with those of document D1, because document D3 discloses a controllable drug injection electrode containing multiple drugs (molecules) (claim 20) which can be released independently of each other (claim 21), see D3 page 5, l. 8 - 27.

3.) Further Remarks

It appears that dependent claims (8), (10-15), (30-31),(32), (34,36-37,50,52), (44-49), (58-

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59), (61) and (64, 67) comprise features which cannot be found in any of the documents cited in the International Search Report and appear furthermore to provide technical effects. Thus, these claims could be used in any possible future regional phase as the basis for claims which would fulfil the requirements of novelty / inventive step, whereas possible unity problems will have to be considered, if any.

Re Item VII

Certain defects in the international application

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought **is not clearly defined**. For instance the statement in claim 1, "electric field including a transport effect for transporting a molecule in a desired manner", does not enable the skilled person to determine which technical features are necessary to perform the stated functions.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 015/01117	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IL 00/ 00319	International filing date (day/month/year) 04/06/2000	(Earliest) Priority Date (day/month/year) 04/06/1999
Applicant IMPULSE DYNAMICS N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

1
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

ational application No.

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Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The abstract is changed as follows:

Line 1: after "apparatus" insert "(100)";
line 2+5: after "electrode" insert "(106)";
line 3+4: after "power source" insert "(120)".

INTERNATIONAL SEARCH REPORT

International Application No

PC/L 00/00319

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N1/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 087 243 A (AVITALL BOAZ) 11 February 1992 (1992-02-11) cited in the application column 3, line 11 -column 5, line 58; figures --- -/--	1 2, 3, 6, 9, 12, 13, 18, 22, 23, 25-27, 41, 65, 68

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

15 September 2000

Date of mailing of the international search report

22/09/2000

Name and mailing address of the ISA

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Authorized officer

Rakotondrajaona, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 00/00319

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 15317 A (SULZER INTERMEDICS INC) 16 April 1998 (1998-04-16) cited in the application page 4, line 16 -page 10, line 34 page 12, line 25 -page 14, line 10; figures ---	1,3-7, 12-17, 20,33, 35,40, 51,62, 65,68
A	US 5 634 899 A (SHAPLAND JAMES E ET AL) 3 June 1997 (1997-06-03) cited in the application column 2, line 49 -column 3, line 44; figures -----	1,12-17, 22-24, 62,63, 65,66,68

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 00/00319

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5087243	A	11-02-1992	AT 127028 T	15-09-1995
			CA 2044791 A,C	19-12-1991
			DE 69112533 D	05-10-1995
			DE 69112533 T	08-02-1996
			EP 0468636 A	29-01-1992
			JP 2686383 B	08-12-1997
			JP 5115562 A	14-05-1993

WO 9815317	A	16-04-1998	NONE	

US 5634899	A	03-06-1997	AU 1559595 A	01-08-1995
			WO 9518649 A	13-07-1995
			US 5865787 A	02-02-1999

PATENT COOPERATION TREATY

RECEIVED

28-12-2000

FENSTER & Co.

PCT

From the INTERNATIONAL BUREAU

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To
FENSTER, Paul
Fenster & Company Patent
Attorneys, Ltd
P.O. Box 10256
49002 Petach Tikva
ISRAEL

Fenster & Co.

28-12-2000

Docketed by: 18

Date of mailing (day/month/year) 14 December 2000 (14.12.00)		
Applicant's or agent's file reference 015/01117		
International application No. PCT/IL00/00319	International filing date (day/month/year) 04 June 2000 (04.06.00)	Priority date (day/month/year) 04 June 1999 (04.06.99)
Applicant IMPULSE DYNAMICS N.V. et al		

IMPORTANT NOTICE

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AG, AU, DZ, KP, KR, MZ, US



In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AL, AM, AP, AT, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EA, EE, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, OA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 14 December 2000 (14.12.00) under No. WO 00/74773

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer: J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 938.83.38